MISSION: INTEGRATION

HANFORD

MISSION

INTEGRATION

SOLUTIONS

NEWSLETTER

MISSION: INNOVATION

September 2021

HMIS
HANFORD MISSION INTEGRATION SOLUTIONS

As seen from the sky, HMIS managed the inaugural drone flight on the Hanford Site.

WHAT'S INSIDE

**Some photos in this issue were taken prior to re-instatement of COVID-19 safety protocols.*

Hyperlinks to stories

Hyperlink to this page

OFFICE OF **THE PRESIDENT**

Technology has become so much a part of our everyday lives, sometimes we don't even notice it or take the time to appreciate it for what it is – innovation. Cell phones, computers, mobile apps, online shopping, smart appliances – the technology possibilities have virtually no limit. That's no different at Hanford and HMIS – innovation is all around us! From web-based applications to virtual tours, mixed-reality technology to unmanned aerial systems (some of which you'll read more about in this month's newsletter) – HMIS is leading the way. The use of UAS at Hanford is of particular significance and I have no doubt we will see the popularity and benefits of that program for years to come.

Congratulations and thank you to the many teams who play a role in the technological innovations in support of the One Hanford mission!

I also want to acknowledge the many, ongoing emotions associated with COVID-19, vaccination and safety requirements. Please remember to treat one another with respect and kindness and to not let these topics or anything else become a workplace distraction that could potentially impact the safety of yourself or a colleague. The safety of our workforce remains our number one priority – please do your part to help us all stay safe.

Bob

SPECIAL **MESSAGE**

Contributor: Diane Cato

It's been a little over 8 months since the HMIS contract began, and I'm fairly certain I speak for many of us when I say – WOW! Our team is so amazing that time flies, and when I reflect on all we have accomplished, I can't believe it's only been 8 months! The work we are doing at Hanford is both impressive and critical.

In the Engineering, Technology & Projects organization, we pride ourselves on work that improves safety, enhances reliability, accelerates progress, and facilitates innovation – at all levels. Within Engineering, one example is the System Health monitoring performed by Design Authorities on our critical infrastructure systems. This process looks for early signs of degradation and ensures systems are available to safely support current and future missions for the site. As our systems begin to age, the need for an upgrade or replacement can result in a Reliability Project that gets executed by our Project Delivery organization. Examples include the recent project to replace wooden poles and lines for part of our electrical transmission system, and the continuing work to upgrade the EU SCADA system and provide for a redundant potable water line to WTP and the new Water Treatment Facility. One of the focus areas for our Technology & Enterprise Architecture team is the Connected Enterprise technology roadmap. Later in this issue, you'll get to meet them and learn more about their scope and the innovations that allow work to be completed more safely and efficiently.

Of course, these efforts would not be successful without the support and dedication of the entire HMIS team – thank you for helping bring safety, reliability and innovation to the forefront of the One Hanford mission!

Workers, players, and evaluators progress through actions early in the exercise.

Hanford Fire Department arrives at the scene of the annual limited exercise.

Limited Exercise Tests Tank Farm Emergency Response

Contributor: Jill Harvill

The Hanford Emergency Management & Preparedness Organization held its annual limited exercise for DOE-RL on August 26. The objective was to test and validate the effectiveness of the Hanford Emergency Response Organization in accordance with the Hanford Site's emergency plan and procedures.

The 2021 exercise scenario simulated an emergency event at the 200 West SY Tank Farm involving a highly flammable waste tank, vehicle crash, and subsequent fire, causing an explosion. The blast simulated a hazardous material release, while the vehicle crash resulted in minor injuries and contamination of personnel.

Held at a facility managed by WRPS, the exercise involved the Emergency Operations Center and members of the control and evaluation organization, including HMIS, CPCCo, HPMC OMS, BNI, and PNNL. Exercise coordinator Joe Cook shared, "The best part of the event was the ability of our team and players to come together and execute the exercise even with the additional COVID-19 controls and safeguards required."

During the exercise, the facility and emergency services were evaluated on overall response to the event. Key actions included the facility declaring a hazardous material operational emergency, implementing pre-planned protective actions to safeguard site personnel, and the response of the Hanford Fire Department.

Even with the success of the August exercise, there will always be aspects of emergency response that can be improved. "The evaluation showed the Hanford Emergency Response Organization can respond to and mitigate a hazardous material operational emergency in accordance with DOE requirements," said Cook. "I feel extremely confident in the Hanford Site's ability to respond to an emergency event."

ONE HANFORD **MISSION**

New GIS Tech Improves Emergency Response

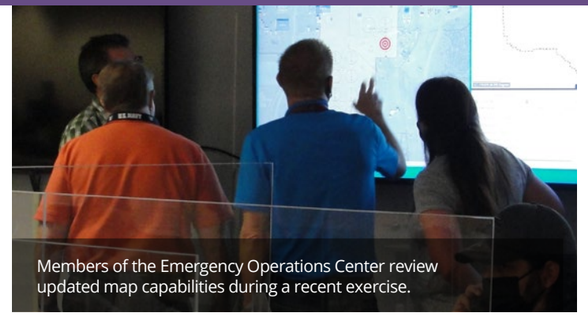
Contributor: Robin Wojtanik

The Hanford Emergency Management Exercise held in August was the first time the Hanford Emergency Operations Center used new, dynamic mapping opportunities developed with assistance from the Geospatial Information Technology Services group.

The improvements took EOC maps from a simple, static display of the borders of the Hanford Site, and layered it with active, event-driven locations, access control points, and even the simulated hazardous material release point.

About 45 minutes into the exercise, a projected dispersion model displayed, showing the EOC where a release would likely travel based on its origin. "As the exercise evolved and the scenario unfolded, we could see key personnel going to the front to inspect the new interactive map and determine what the conditions were," said Ted Morales, manager for Emergency Management Operations. EOC responders could also see the key access control points put in place to protect the scene. "This is a steppingstone for us in working with our GIS staff to continue improving our emergency response capabilities at Hanford," said Morales.

The groups started working together months ago to explore opportunities that would enhance and improve EOC capabilities by leveraging geospatially based solutions. "The steps taken display EOC leadership's commitment to using GIS as a single common

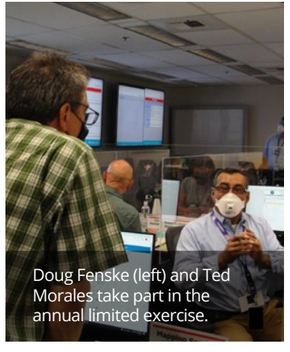


Members of the Emergency Operations Center review updated map capabilities during a recent exercise.

operating platform – supporting emergency personnel from the field to the office," said Jason Altman, GITS program manager.

It all aids in giving responders a good visual picture of what's going on in the field during a potential emergency. "Responders were incredibly enthusiastic," said Kendal Barrow, EOC team lead. "They're all really excited to see what we're going to have in the future and how we can make this even more efficient."

The EOC plans future collaboration with the GITS team to continue taking advantage of this new technology during emergency response on the Hanford Site.



Doug Fenske (left) and Ted Morales take part in the annual limited exercise.

ESF #12 Supports Hurricane Season 2021

Contributors: Robin Wojtanik & Nicole Zawadzki

When Hurricane Ida made landfall in Louisiana in late August, members of the HAMMER Emergency Support Function #12 Energy Response Team were there – and continue to support the response weeks later. A total of 27 responders supported Federal Emergency Management Agency response centers in Washington, D.C., Texas, and Louisiana. Three HAMMER staff members traveled to the Energy Response Center at DOE Headquarters to facilitate operations and coordination.

During the height of the response, DOE's Secretary of Energy, Jennifer Granholm, visited the National Response Coordination Center and the ERC to thank the HAMMER and DOE staff supporting the restoration from this catastrophic storm. HAMMER helped deploy responders, answer information requests, coordinate calls, provide leadership updates, and issue safety forms focused on COVID-19 exposure controls to ensure responder safety. HAMMER is currently helping gather data from the field assessments being conducted by the Catastrophic Incident Response Team in Louisiana and writing a damage assessment report.

The ESF #12 team of energy experts is led by DOE's Office of Cybersecurity, Energy Security, and Emergency Response. HAMMER has provided disaster response and training support for DOE's ESF #12 team in support of disaster response since 2003. HAMMER

HAMMER ESF #12 responders (from left) Nancy Ness, DOE CESER planning section chief Matthew Tarduogno and deputy operations chief Nicole Zawadzki work on the Hurricane Ida response from the Energy Response Center in Washington, D.C.

provides training, deployment coordination and response support during FEMA activations or even for special events, like the recent Olympic trials held this summer in Eugene, Ore.

Last year, HAMMER hosted the yearly ESF #12 refresher training for 150 responders virtually, so team members scattered across the country could adequately prepare for hurricane season. The annual hurricane season, which typically lasts until the end of November, creates a demand for a response ready ESF #12 team as hurricanes tend to impact the nation's energy and utility infrastructure.

ONE HANFORD **MISSION**

Plant Regrowth Thrives in Columbia River Corridor

Contributor: Robin Wojtanik

Enhanced revegetated areas near the Columbia River corridor are progressing successfully, thanks to efforts by our Mission Assurance group. Monitoring in 2017 found some areas in need of additional plant growth, as part of a healthier landscape. HMIS scientists developed a multi-year plan to revegetate with supplemental planting and then monitor the sites for growth. This technique adds additional plant species in the affected areas without clearing the ground entirely and restarting. Hanford Site teamsters, led by Biological Controls, worked during the prime revegetation months of the fall and winter over multiple years to add additional native seed and shrubs to the identified areas. Since supplemental planting began, our MA teams confirmed new growth in the areas of concern.

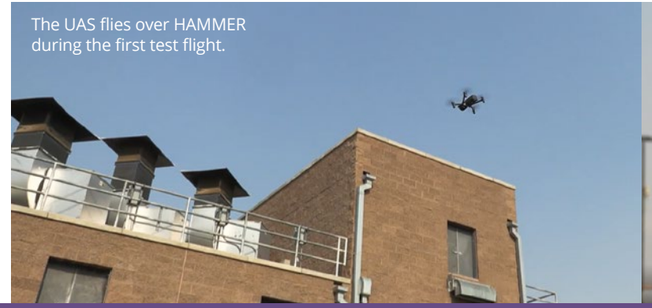
To determine how vegetation growth is progressing, biologists check for two things – shrub density and native cover. Shrub density looks at the number of planted shrubs on a single acre, targeting 240 as the goal, while native cover uses a percentage to determine how much of the area is covered with native plants, with 25% considered successful. For a portion of the enhanced area, mostly at former waste sites around the river corridor, our team noted shrub density above the target – indicating success. For native cover, the average has risen from 9% to 22% at the sites revegetated in 2019 and monitored, showing improvement just shy of the final goal.

During supplemental planting, biologists used a specially-formulated seed mix to encourage pollination and species diversity. This included adding flower "plugs," which work like a garden starter, giving the flowers a better chance at surviving and acting as a seed source in the revegetation sites.

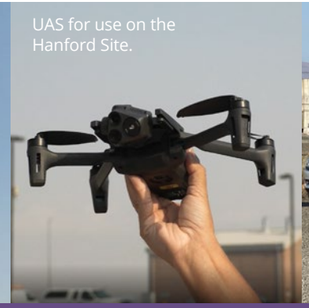
By analyzing data from the past three years on the supplemental planting, teams are confident the prognosis is good and expect the vegetation to continue thriving.

An example of enhanced revegetation before and after in the 600 Area near the old railroads. Before biologists stepped in, the area was overgrown with cheatgrass and weeds.

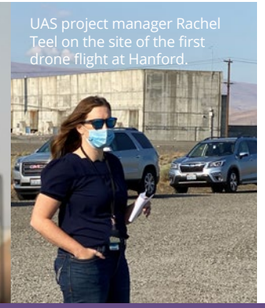
HMIS biologist Emily Norris completes revegetation monitoring in the field to check progress of plant growth.



The UAS flies over HAMMER during the first test flight.



UAS for use on the Hanford Site.



UAS project manager Rachel Teel on the site of the first drone flight at Hanford.

New Technology Launches on Hanford Site

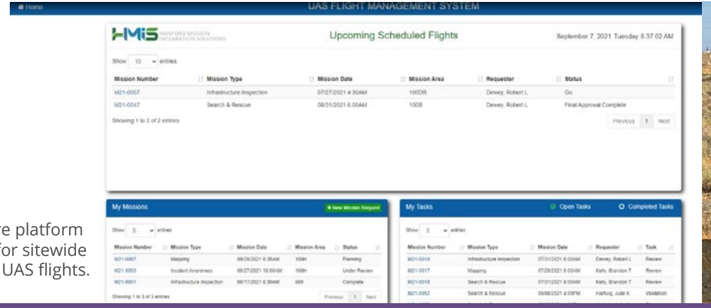
Contributor: Cerise Peck

A new tool with incredible possibilities has arrived on the Hanford Site following dedicated work by members of our Mission Assurance team, including Rachel Teel and Ben Cowin. “In short order, they were able to develop, and now deploy, an unmanned aircraft system platform that’s secure, safe and compliant,” said Todd Synoground, vice president of Infrastructure and Site Services.

The MA organization took on the UAS project over a year ago, diligently meeting all program requirements and receiving all required approvals. This allowed Teel and Cowin to complete two successful test flights in August, bringing the technology of UAS to the Hanford Site.

An exciting addition, the drone used in the test cases has the capabilities of photo, video, and infrared. During the initial evaluation, the team deployed the drone at HAMMER and Borrow Pit 34 where it was able to inspect the facility, assess the building’s heat loss and measure material volume. The successful test flights showcased the drone’s capabilities while celebrating the hard work of everyone involved. “Our use cases are only limited by our imagination,” said Synoground. “There are hundreds of drone capabilities on the Hanford Site. Everything from emergency response, managing site lands, working specifically with programs and projects, and providing the ability to tour remotely.”

Along with their effort to bring the drone to Hanford, Teel and Cowin worked with North Wind Solutions software engineering to develop and implement a sitewide program to schedule and approve UAS mission requests. Congrats to everyone on the UAS team on their success with this project!



The software platform developed for sitewide requests of UAS flights.

Casey de Groof (left) and Craig Babcock observe Hanford’s inaugural drone flight.

Software Developed for Unmanned Aircraft System

Contributor: Cerise Peck

Big projects at the Hanford Site require many checks and balances to ensure the mission is completed safely and efficiently. Thanks to unmanned aircraft system project managers and the North Wind Solutions software development team, scheduling the use of the new unmanned aircraft system will be a breeze! The software coincides with the new capability for contractors to request drone use for various projects.

Once the UAS program becomes available to the Hanford Site, the software will allow requests to be made in a “one-stop shop.”

Navigating the request is quick and easy, allowing all mission approvals to be managed in one location. After an initial request, follow-up tasks will ensure the drone is flown in a safe, compliant manner.

The review process requires participation by various organizations, including Cybersecurity and Environmental. Having a centralized location to track progress is both convenient and essential to the completion of each request. The successful development and implementation of the scheduling software made for an overall win for HMIS and the Hanford Site!

Marisol Castillo,
CPIC & FITARA Program Manager

Brad Ferguson,
IT Operations Solutions Architect

Dan Gregory,
IT Strategic Planning Program Manager

Chris Hedger,
Cyber Security Solutions Architect

Jason Lacher,
Chief Technology Officer

John Lawson,
Software Development Solutions Architect

Meet the Team: Technology & Enterprise Architecture

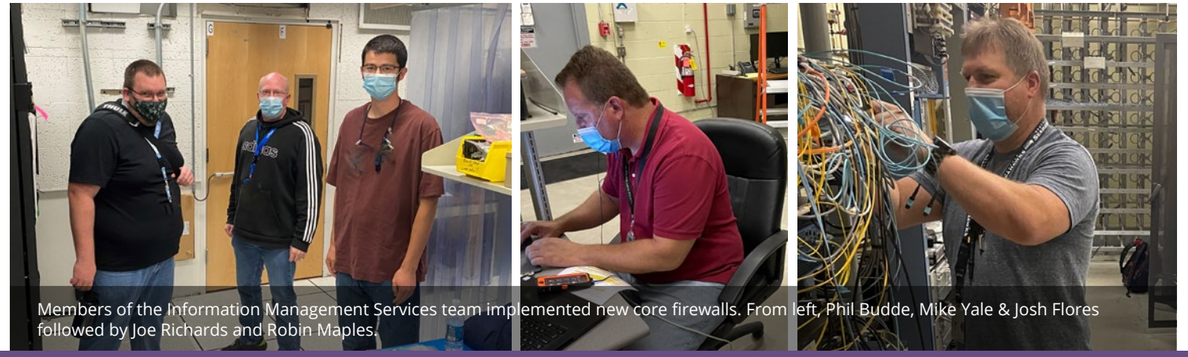
Contributor: Melissa Ver Steeg

You may have heard about the Connected Enterprise or Hanford IT Governance model, but what do those terms mean and who's responsible for making those happen? And how does Hanford decide where to go with technology? Enter the HMIS Technology & Enterprise Architecture team within our Engineering, Technology & Projects organization. This team helps determine the right technology capabilities to support the One Hanford mission, working as the core group providing guidance and advocacy for centralized IT services and technology across the Hanford Site.

With Jason Lacher as HMIS chief technology officer, and his team of solutions architects and program managers, HMIS is expanding its site integrator role in technology. Once a project aligns with the strategic plan in creating a connected enterprise and other initiatives, the team determines if it makes good business sense, such as supporting Hanford versus just one company. Through IT Governance, the team collaborates with other Hanford contractors on making large scale changes and investments in IT. This includes researching things like better connectivity, such as 5G to HLAN for employees working in the field (e.g., HoloLens), being able to monitor utility systems, such as water lines and the electrical grid with sensors, consolidating application systems across functional organizations and companies, centralizing and extracting real-time insights with data management, and creating sitewide IT standards across the Hanford complex.

To align with the roadmap of the Connected Enterprise 10-year plan, the T&EA team pulls from all its capabilities, including technology innovation, enterprise architecture, IT standards, reference architectures, IT strategic planning, DevSecOps (software development, cyber security, and IT operations), capital planning, and IT governance.

(Cont'd)



Members of the Information Management Services team implemented new core firewalls. From left, Phil Budde, Mike Yale & Josh Flores followed by Joe Richards and Robin Maples.

MISSION: INNOVATION

New Firewalls Boost Performance, Security

Contributor: Robin Wojtanik

Innovation is at the heart of new technology recently implemented by our Information Management Services team. The organization added new core firewalls – ensuring our two Hanford data centers are equipped with the latest technology to help prevent unauthorized access to the Hanford Local Area Network.

This protection even includes threats considered "advanced" – which may now be stopped in their tracks by identifying and scanning all digital traffic on the HLAN. Hackers are constantly working to develop and evolve new ways to break into networks – which means our cyber experts must stay just as nimble.

By keeping an eye on applications, users and content, the firewalls can aid in stopping these advanced threats.

Additionally, the new firewalls have a "throughput" between three and five times greater than the previous firewalls – which means they can process three-to-five times as much data traffic as compared to the old system. Within days of implementation, project manager Derek Trebes said, "We have already seen a significant performance improvement on the core network since the new firewalls were turned up."

HMIS FAMILY

HMIS Family Takes the Stage

Contributor: Melissa Ver Steeg

An on-stage performance wasn't a bucket list item for HMIS ethics officer Kadi Bence, but she recently found herself part of the cast of Shrek the Musical at Vibe Music and Performing Arts Center in Kennewick.

When approached by her daughter, who played Fiona in the musical, about the need for additional cast members, Kadi couldn't refuse the challenge. "I love to sing, but am not a singer," she warned. Kadi consulted her sons, one of whom is a 7th grader and Shrek cast member, the other a college senior majoring in theater and general business. After getting the green light from all three of her children, Kadi was on her way to becoming a star! Or at least stepping outside her comfort zone and doing something new and exciting this summer.

Kadi Bence, HMIS ethics officer, as Mama bear (right) in a local production of Shrek the Musical.

Kadi played two moms during the performance: Mama ogre (Shrek's mom) and Mama bear of Goldilocks and the Three Bears. Kadi discovered a new appreciation for the complexity and challenges of theater, from rehearsal schedules to costume changes to choreography. Kadi found singing and dancing at the same time was "really, really hard." But she's glad she did it, "It was a crazy experience, but I have a much better understanding of what my children undergo and what it takes to put on a production like this."

Kadi Bence (center) with children KayLee (left) and Brody, ready to break a leg!

The HMIS family showed their support to Kadi Bence when she took the stage for a community theater performance.
**Photo taken before statewide mask mandate re-instated.*

HMIS in the Community

Thanks to the generosity of the HMIS family and the Tri-Cities community, boxes of school supplies were distributed to schools and students in the Tri-Cities through Townsquare Media's Stuff the Bus supply drive – sponsored by HMIS. Thank you to everyone who donated and helped spread the word.

COO Amy Basche kicked off the Stuff the Bus school supply drive with live radio broadcasts, sharing, "Just like we serve to enable Hanford contractors to be successful, we want to enable the success of local students by ensuring they have the right supplies!" **Photo taken before statewide mask mandate re-instated.*

Debbie Strankman (pictured), with IT Liaison and Print Services, and her daughter, Kristin Strankman (not pictured), with Field Project Controls, took the opportunity to help local students by donating backpacks full of school supplies! **Photo taken before statewide mask mandate re-instated.*

HMIS president Bob Wilkinson, CBVC executive director Matt Sammons, CBVC mentor coordinator Tom Mattis, HMIS vice president of IS&S Todd Synoground and communications manager Reneé Brooks (not pictured) talked about the organization's needs to continue supporting veterans in our community.

Tour of Veterans Center

Several HMIS representatives recently toured the Columbia Basin Veterans Center in its "new" location (they moved into it in early 2020). Offering numerous services to local veterans, CBVC prides itself on assisting our veterans with the resources and benefits earned through their service. The organization operates two homes for veterans, a closet for clothing and personal hygiene items, and aids with various issues, including transportation, housing and employment. CBVC also provides space for other agencies who offer free counseling, help filing service-related claims and more.


HMIS
HANFORD MISSION INTEGRATION SOLUTIONS